

15.04.020 International Residential Code - One Family and two Family Residences - Regulations 21

15.04.020 – International Residential Code - One Family and two Family Residences - Regulations 2015 - adopted and modified

The provisions of the 2015 International Residential Code for One and Two Family Dwellings, published February 2015 by the International Code Council, Inc., 4051 West Flossmoor Road, Country Club Hills, IL 60478 (hereinafter sometimes referred to as "the IRC"), not less than one (1) copy of which have been and are on file in the Office of the Clerk of the City of St. Charles, Illinois for more than thirty (30) days, together with the amendments listed herein, are hereby adopted as the regulations governing the construction of one and two family dwellings and townhouses not more than three stories in height.

Amendments to the 2015 International Residential Code for One and Two Family Dwellings:

Chapter 1 – Administration:

A. Section R101.2 Scope: Revise to read as follows:

"R101.2 Scope. The provisions of the International Residential Code for One and Two Family Dwellings shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal, and demolition of detached one and two family dwellings not more than three stories in height with a separate means of egress and their accessory structures."

B. Section R105.2 Work exempt from permit: Delete this section.

C. Section R105.2.3 Public service agencies: Delete this section.

D. Section R105.5 Expiration: Revise to read as follows:

"R105.5 Expiration. Every permit, except demolition permits, shall become invalid or void unless the work authorized by such permit is commenced within 180 days after its issuance, if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. Demolition must commence within ten (10) days and completed within thirty (30) days of issuance, otherwise the permit becomes invalid. The Building Official is authorized to grant, in writing, one or more extensions of time, for any permits, for a period not more than 180 days each. The extension shall be requested in writing and justifiable cause demonstrated."

E. Section R105.7 Placement of permit: Revise to read as follows:

"R105.7 Placement of permit. The building permit card shall be kept on the site of the work and be visible from the street until such time as a certificate of occupancy permit has been issued, or a final inspection has been performed."

F. Section R106.1.4 Information for construction in flood hazardous areas

Revise to read as follows:

"R106.1.4 Information for construction in flood hazardous areas. For buildings and structures in flood hazard areas, as established on local floodway rate maps, locally adopted flood plain ordinances shall apply."

G. Section R106.3.1 Approval of construction documents:

Revise to read as follows

"R106.3.1 Approval of construction documents. When the Building Official issues a permit, the construction documents shall be approved in writing or by stamp. One set of the approved construction documents as reviewed shall be retained by the Building Official. The other set shall be returned to the applicant and shall be kept on the site of the project and shall be open to inspection by the Building Official or his or her authorized agent/representative."

H. Section R106.3.4 Pre-Application conference: Add a new section to read as follows:

"R106.3.4 Pre-Application conference. All applicants and owners seeking demolition permits for principal buildings on a lot or site shall first be required to attend a pre-application conference with the Building Official and other city staff as directed, for the purpose of discussing the City of St. Charles requirements for demolition and reconstruction."

I. Section R109.1.3 Flood plain inspection: Delete this section.

J. Section R110.1 Use and occupancy: Delete the exceptions.

K. Section R110.3 Certificate issued: Delete lines 3, 5, 7, 8, and 9.

Chapter 2 – Definitions:

A. Change the stated term MANUFACTURED HOME to MANUFACTURED/MOBILE HOME

B. Delete the stated definition of Townhouse and substitute therefore:

"TOWNHOUSE. A single family dwelling unit constructed in a group of 3, 4, 5 or 6 attached units in which each unit extends from foundation to roof and with open space on at least two sides. Dwelling units where more than six units are attached shall be governed by code provisions applicable to multiple family dwellings, rather than the provisions of this one and two family dwelling code."

Chapter 3 – Building Planning:

1. Table R301.2 (1) Climatic and Geographic Design Criteria: Revise to read as follows

	Wind Design		Subject to Damage From					

Ground Snow Load	Speed (mph)	Topographic effects	Special wind region	Wind-borne debris zone	Seismic Design Category	Weathering	Frost line depth	Termite	Winter Design Temp	Ice Barrier Underlayment Required	Flood Hazards	Air Freezing Index	Mean Annual Temp
30	115	No	No	No	B	Severe	42-Inches	Mod to Heavy	-5F	Yes	Local Ordinance	2000	48.5

See captions under Table R301.2 (1) in the book for exceptions and conditions of approvals.

B. **Section R301.2.4 Floodplain construction.** Delete this section.

C. **Section R302.1 Exterior walls:** Delete exceptions 1 & 2.

D. **Section R302.2 Townhouses:** Revise to read as follows:

Revise to read as follows:

"R302.2 Townhouses. Each townhouse, as defined in this code, shall be constructed as a separate single-family dwelling unit and shall be separated by a minimum of an approved 2-hour UL rated assembly, which shall extend vertically from the foundation to the underside of the roof sheathing and horizontally the full length of the common wall. The number of single family dwelling units attached in this manner shall not exceed six (6)."

(Ord. 2016-M-9 § 1; Ord. 2012-M-10 § 1.)

E.1 **Section R302.3 Two family dwellings:** Revise to read as follows:

R302.3 Two family dwellings. Dwelling units in two family dwellings shall be constructed with a minimum of an approved 2-hour UL rated assembly between living units. Floor/ceiling assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend from the foundation to the underside of the roof sheathing and shall extend the full length of the common wall."

(Ord. 2012-M-10 § 1.)

E.2 **Section R302.3 Two family dwellings:** Delete the exceptions.

F. **Section R302.7 Under stair protection:** Revise to read as follows:

"R302.7 Under stair protection. Enclosed accessible space under stairs shall have walls, under stair surfaces, and any soffits, protected on the enclosed side with 5/8-inch type X gypsum board."

G. **Section R303.3 Bathrooms, Exception:** Revise to read as follows:

"Exception: The glazed area shall not be required where artificial light and mechanical ventilation systems are provided. The minimum ventilation rates shall be 50 cfm for intermittent ventilation or 20 cfm for continuous ventilation. Ventilation air from the space shall be exhausted directly to the exterior of the structure by means of either the soffit area with an approved connection to the soffit or through the roof with an insulated (R-3) duct and approved roof fitting."

H. **Section R309.1.2 Opening protection:** Add a new section to read as follows:

"R309.1.2 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8-inches in thickness, solid or honeycomb core steel doors not less than 1 3/8-inches thick. All such doors shall be equipped with self-closing hinges."

I. **Section R309.2.1 Separation required:** Add a new section to read as follows:

"R309.2.1 Separation required. The garage shall be separated from the residence and any attic area by not less than 5/8-inch type X gypsum board applied to the garage side and taped with a minimum one coat of approved joint tape and compound. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall be protected by not less than 5/8-inch type X gypsum board with one coat of approved joint tape and compound or equivalent. The garage floor shall be poured a minimum of 4-inches below the top of the foundation to form a gas curb on any wall of the garage abutting the house."

J. **Section R310.1 Emergency escape and rescue required:** Revise to read as follows:

"R310.1 Emergency escape and rescue required. All basements and sleeping rooms shall have at least one openable emergency escape and/or rescue window or exterior door opening for emergency escape and/or rescue. Where windows are provided as a means of escape and/or rescue, they shall have a sill height of not more than 44-inches above the finished floor. Where a window (s) is provided as a means of egress and/or rescue from a basement or basement bedroom, they shall have a sill height not more than 36-inches above the finished floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section 310.3. The net clear opening dimension required by this section shall be obtained by the normal operation of the window or door opening from the inside. Escape and rescue window openings with a finish sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2 of this Code."

K. **Section R310.2.1 Ladder and steps:** Revise to read as follows:

"R310.2.1 Ladder and steps. Window wells with a vertical depth greater than 36-inches below the adjacent ground level shall be equipped with a permanently affixed ladder or steps usable with the window in the full open position. Ladders and steps required by this section shall not be

required with Section R314 and R315. Ladders or rungs shall have an inside width of at least 12-inches, shall project at least 3-inches from the wall, and shall be spaced not more than 18-inches on center vertically for the full height of the window well."

L. **Section R-311.2 Egress Door:** Revise to read as follows:

"**R-311.2 Egress Door.** Not less than two (2) exits with a minimum of one (1) exit conforming to this chapter shall be required from each dwelling unit. All such exits shall discharge at grade. The required exit doors shall not pass through a garage."

M. **Section R311.7.6 Landings for stairways:** Revise to read as follows:

"R311.7.6 Landings for stairways. A minimum of 3-foot by 3-foot landing shall be required on each side of an egress door. The floor or landing shall not be more than 1 1/2-inches lower than the top of the threshold.

Exception:

1. At the top of a flight of all stairs, provided the door does not swing over the stairs."

N. **Section R313.1 Townhouse automatic fire sprinkler systems:** Revise to read as follows:

Exception No. 2: The requirement for the installation of automatic fire sprinkler systems in townhouses is deferred until December 31, 2019.

O. **Section R313.2 One- and two-family dwellings automatic fire sprinkler systems**

Exception No. 2: The requirement for the installation of automatic fire sprinkler systems in one- and two-family dwellings is deferred until the adoption of new codes, including the adoption of the 2021 International Residential Code for One and Two Family Dwellings, by International Code Council, Inc., or December 31, 2021, whichever occurs first.

P. **Section R311.7.8 Handrails:** Revise to read as follows:

"R311.7.7 Handrails. Handrails shall be provided on at least one side of each continuous run of treads or flight with three (3) or more risers."

Q. **Section R314.3 Locations:** Revise to read as follows:

"R314.3 Locations. Single and multiple-station smoke alarms shall be installed in the following locations:

- a. In each sleeping room.
- b. Outside of each separate sleeping room or area, within 15-feet of all bedrooms.
- c. On each additional story of the dwelling, including basements and cellars, but not including crawl spaces and uninhabitable attics.
- d. In dwellings or dwelling units with split-levels. For the purpose of this section each split-level shall be considered a story.

When more than one (1) smoke alarm is required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the actuation of one (1) alarm will activate all of the alarms in the dwelling unit. The alarm shall be clearly audible in all bedrooms over background noise levels, with all intervening doors closed.

All smoke alarms shall be listed and installed in accordance with the provisions of this code and the household fire warning provisions of NFPA 72."

R. **Section R317.1.2 Ground contact:** Revise to read as follows:

"**R317.1.2 Ground contact.** Supports for permanent structures intended for human occupancy and which come in contact with the ground shall not be constructed of wood."

S. **Section R317.1.4 Wood columns:** Revise to read as follows:

"**R317.1.4 Wood columns.** Posts, poles, and columns supporting structures that are embedded in concrete, in direct contact with the earth or are embedded in concrete exposed to the weather are prohibited."

T. **Section R322 Flood resistant construction:** Delete this section.

Chapter 4 – Foundations:

A. **Section R401.1 Application:** Amend to read as follows:

"**R401.1 Application.** The provisions of this Chapter shall control the design and construction of the foundation and foundation spaces of all buildings and structures."

B. **Section R402.1, 402.1.1, 402.1.2:** Delete these sections.

C. **Section R403.1 General:** Delete the words "wood foundation" within the first sentence.

D. **Section R403.1.1 Minimum size:** Amend to read as follows:

"**R403.1.1 Minimum size.** Minimum sizes for concrete and masonry footings shall be as follows. Footing width shall be a minimum of twice the width of the wall it is supporting, or a minimum of 18-inches, whichever is greater. Unless soil conditions warrant a greater width, or so designed

and certified by a license design professional, footing projections shall be equal to $\frac{1}{4}$ the width of the footing and the wall must fit center on the footing. Single story structures may be placed on 10-inch wide by 42-inch deep trench footing. Footing thickness shall be a minimum of 8-inches or the same depth as the wall thickness, whichever is greater, or as designed by a licensed design professional. See Figure R403.1 (1) for an illustration."

E. **Table R403.1 Minimum width of concrete or masonry footings (inches):**

Delete this table.

F. **Figure R403.1 (1) Concrete and masonry foundation details:**

(See attached Figure R403.1 (1))

G. **Figure R403.1 (2) Permanent Wood Foundation Basement Wall Section:** Delete this figure.

H. **Figure R403.1 (3) Permanent Wood Foundation Crawl Space section:** Delete this figure.

I. **Section R403.2 Footings for Wood Foundations:** Delete this section.

J. **Section R404.1.5.3 Pier and Curtain Wall Foundations:** Delete this section.

K. **Section R404.2 Wood Foundation Walls:** Delete this section.

L. **Sections R404.2.2 Stud Size and R404.2.3 Height of Backfill:** Delete these sections.

M. **Table R404.2.3 Plywood Grade and Thickness for Wood Foundation Construction** Delete this table.

N. **Sections R404.2.4 Backfilling; R404.2.5 Drainage and Damp Proofing** and R404.2.6 Fastening: Delete these sections.

O. **Sections R405.2 and R405.2.1 through R405.2.3 Wood Foundations:** Delete these sections.

P. **Sections R406.3 Damp Proofing of Wood Foundations:** R406.3.1, R406.3.2, R406.3.3, and **R406.3.4:** Delete these sections.

Q. **Section R407.1 Wood Column Protection:** Delete this section.

R. **Section R408.4.1 Crawl Space Floor:** Add a new section to read as follows:

"R408.4.1 Crawl Space Floor. A minimum of a 2-inch thick slush coat of poured concrete shall be installed over a minimum of 4-inch thick stone in the crawl space, with a minimum of a six (6) mil thick polyethylene film moisture barrier with all joints lapped a minimum of 6-inches."

Chapter 5 – Floors:

A. **Section R502.1.4.1 Fire Protection.** Prefabricated Wood I-Joists: Add a new section to read as follows:

"R502.1.4.1 Fire Protection. Prefabricated Wood I-Joists. When prefabricated wood I-Joists are used and there is usable space above and below a floor/ceiling assembly, the assembly shall be protected from fire impingement by one of the following:

1. The minimum application of one layer of 5/8-inch drywall and draft stopped per Section 502.12 of the 2006 International Residential Code.
2. The installation of an approved sprinkler system."

B. **Section R502.7.1 Bridging:** Amend to read as follows:

"R502.7.1 Bridging. Joists shall be supported laterally by solid blocking, or diagonal bridging (wood or metal) at intervals not exceeding 8-feet."

C. **Section R502.11.4 Truss Design Drawings:** Amend to read as follows:

"R502.11.4 Truss Design Drawings. Truss design drawings shall be submitted to and approved by the Building Official prior to a permit being issued for the structure. Truss design drawings shall be provided with the shipment of trusses to the job site. These truss design drawings shall include, at a minimum, the information specified below:

1. Slope or depth, span, and spacing;
2. Location of all joints;
3. Required bearing widths;
4. Design loads as applicable;
 - 4.1 Top cord live load (including snow load)
 - 4.2 Top cord dead load
 - 4.3 Bottom cord live load
 - 4.4 Bottom cord dead load
 - 4.5 Concentrated loads and their points of application
 - 4.6 Controlling wind and earthquake loads

5. Adjustments to lumber and joint connector design values for conditions of use;
6. Each reaction force and direction;

Joint connector type and description (e.g. size, thickness, or gauge) and the dimensioned location of each joint connector except where symmetrically located relative to the joint interface;

7. Lumber size, species and grade for each member;
8. Connection requirements for:
 - 8.1 Truss-to-truss girder
 - 8.2 Truss ply-to-ply
 - 8.3 Field splices
9. Calculated deflection ratio and/or maximum description for live and total load;
10. Maximum axial compression forces in the truss members or enable the building designer to design the size, connections, and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss drawing or on supplemental documents;
11. Required permanent truss member bracing location; and
12. Layout design."

D. **Section R504 Pressure Preserved Treated Wood Floors (on ground):** Delete this section.

E. **Section R506.1 General:** Amend to read as follows:

"**R506.1 General.** Concrete slab-on-ground floors shall be a minimum 4-inches thick with a minimum of 6x6 welded wire fabric embedded in the mid cross section of the slab. The compressive strength of concrete shall be as set forth in Section R402.2. Fiber mesh can be used in place of welded wire."

F. **Section R506.2.1.1 Back-Fill in Garages (attached):** Add a new section to read as follows:

"**R506.2.1.1 Back-Fill under Concrete Garage Floors (attached).** The sub-base for poured concrete garage floors shall be undisturbed inorganic soil. All fill material shall be clean graded sand, crushed stones, or gravel. The use of any soils as fill material is prohibited. Compacted non-organic material can be used with dowelling #4 rebar into the foundation wall a minimum of 4- inches extending into the garage floor area a minimum of 3-feet, placed 24-inches on center around the three (3) walls forming the garage area, may be used. Any practice of soaking the soils within this area will be done in strict conformance with the locally applicable water conservation ordinance and shall be metered."

Chapter 6 – Wall Construction:

A. **Section R602.2 Grade:** Amend to read as follows:

"**R602.2 Grade.** Studs shall be a minimum No. 2, standard or stud grade lumber."

B. **Section R602.3.2 Top Plate:** Delete the exception.

C. **Table 602.10.2 Intermittent Bracing Methods:** Delete methods number four (4) SFB and five (5) GB.

Chapter 7 – Wall Covering:

No Changes.

Chapter 8 – Roof-Ceiling Construction:

A. **Section R802.10.1 Truss Design Drawings:** Amend to read as follows:

"**R802.10.1 Truss Design Drawings.** (See Section R502.11.4, as amended by this ordinance.)"

Chapter 9 – Roof Assemblies:

A. **Section R905.2.7.1 Ice Barrier:** Amend to read as follows:

"**R905.2.7.1 Ice Barrier.** On all new roof construction and roof tear offs an ice protection barrier that consists of a self-adhering polymer modified bitumen sheet shall be used in lieu of normal underlayment and extend from the eave's edge to a point at least 24-inches inside the exterior wall line of the structure."

Chapter 10 – Chimneys and Fireplaces:

A. **Section R1003.9 Termination:** Amend to read as follows:

"**R1003.9 Termination.** Chimneys shall extend at least 2-feet higher than any portion of a building within 10-feet, but shall not be less than 3-feet above the point where the chimney passes through the roof. All wood or solid fuel burning fireplaces and stoves shall be equipped with an approved spark arrestor."

Chapter 11 – Energy Efficiency:

No Changes.

Chapter 12 – Mechanical Administration:

No Changes.

Chapter 13 – General Mechanical System Requirements:

A. **Section M1307.3.2 Heating Units in Garages:** Add a new section to read as follows:

“M1307.3.2 Heating Units in Garages. Units designed to heat the habitable space of the home shall not be located in a garage.”

Chapter 14 – Heating and Cooling Equipment:

No Changes.

Chapter 15 – Exhaust Systems:

No Changes.

Chapter 16 – Duct Systems:

A. **Section M1602.2.1 Return Air Vents:** Add a new section to read as follows:

“M1602.2.1 Return Air Vents. Return air vents connected to the heating and cooling system, shall be located in every habitable room of the home, except as prohibited in Section M1602.2 of the code.”

Chapter 17 – Combustion Air:

No Changes.

Chapter 18 – Chimney and Vents:

No Changes.

Chapter 19 – Special Fuel – Burning Equipment:

No Changes.

Chapter 20 – Boilers/Water Heaters:

No Changes.

Chapter 21 – Hydronic Piping:

No Changes.

Chapter 22 – Special Piping and Storage Systems:

A. **Delete Chapter 22 in its entirety.**

Chapter 23 – Solar Systems:

No Changes.

Chapter 24 – Fuel Gas:

No Changes.

Chapters 25 through 32 – Plumbing:

A. “Delete Chapters 25 through 32. Substitute therefore: The most current State of Illinois Plumbing Code as adopted and/or amended by the City of St. Charles.”

Chapters 33 through 42 – Electrical:

No Changes.

Chapter 43 – Referenced Standards:

No Changes.

Appendix Adoption:

Adopt the following Appendices

- Appendix A - “Sizing and Capacities of Gas Piping”
- Appendix B – “Sizing of Venting Systems – Appliances”
- Appendix C – “Exit terminals of Mechanical Venting Systems”
- Appendix D – “Procedure for Safety Inspection – Existing Appliances”


- Appendix F – “Radon Control Systems” - Delete Figure AF102.
- Appendix G – “Swimming Pools, Spas, and Hot Tubs”
- Appendix J – “Existing Buildings and Structures”
- Appendix K – “Sound Transmissions”
- Appendix M - “Home Day Care R-3 Occupancy”

Delete the following Appendices:

- Appendix E - “Manufacturing Housing used as Dwellings”
- Appendix H - “Patio Covers”
- Appendix I - “Private Sewage Disposal”
- Appendix L - “Permit Fee”
- Appendix N - “Venting Methods (Plumbing)”
- Appendix O - “Gray Water Recycling Systems”
- Appendix Q – “Cross Reference – ICC International Residential Code

Electrical Provisions/National Electrical Code”

Exhibits:

 figure r403.1.png.jpg

(2019-M-48 ; 2017-M-45 ; 2016-M-59 : § 1; 2016-M-10 : § 1 ; 2016-M-8 ; 2015-M-71 : § 1; 2010-M-43 : § 1; 2003-M-6 : § 1; 1997-M-140 : § 1; 1983-M-14 : § 1 (part); 1978-M-19 : § 1 (part); Prior code : § 13.102.2.)